



CLAYTON H. RIDDELL FACULTY OF ENVIRONMENT, EARTH AND RESOURCES

Applicant Information Bulletin:
2011-2012

Application Deadlines:

SUMMER APPLICANTS: April 1, 2011

SEPTEMBER APPLICANTS: July 4, 2011

JANUARY APPLICANTS: November 1, 2011

I. CLAYTON H. RIDDELL FACULTY OF ENVIRONMENT, EARTH, AND RESOURCES

The Clayton H. Riddell Faculty of Environment, Earth, and Resources offers undergraduate degree programs leading to a Bachelor of Arts in Geography, Bachelor of Science in Physical Geography, Bachelor of Environmental Science, Bachelor of Environmental Studies, and Bachelor of Science in Geological Sciences.

Students must apply for admission both to the Faculty as well as to their intended degree program. Faculty admission is based on the completion of a minimum of 24 credit hours through University 1 or another Faculty at the University of Manitoba (*these applicants are considered internal*) or another recognized post-secondary institution (*these applicants are considered external*). Normally only students who have attained a minimum Cumulative Grade Point Average of 2.00 are admissible to the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Students applying to the B.A. Geography General degree program will have their Grade Point Average calculated on the basis of a proportion of completed courses as outlined in Table 1 of this *Bulletin*.

Students possessing a first degree from a recognized university program with a minimum Cumulative Grade Point Average of 2.00 may be eligible for admission as Second Degree students provided they have completed the minimum coursework entrance requirements for their intended degree program. The Second Degree requirements may be shortened by up to 60 credit hours and, once admitted to the program, students will be expected to conform to all continuation and graduation requirements.

Students who hold a first degree from a recognized university, and who wish to take courses from the Faculty for personal interest without completing a degree, can apply for admission as Special Students.

The following information outlines the 2011-2012 general entrance requirements, selection policies, and admission procedures in effect for the degree programs available from the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Each degree program defines specific entrance and performance requirements and students are therefore referred to the appropriate

section of this *Bulletin*.

For more detailed information on the Clayton H. Riddell Faculty of Environment, Earth, and Resources, please see www.umanitoba.ca/environment or review the Clayton H. Riddell Faculty of Environment, Earth, and Resources section of the annual *Undergraduate Calendar* which is available at www.webapps.cc.umanitoba.ca/calendar

II. COOPERATIVE EDUCATION

A Cooperative Education Option is available to students registered in either the Major or Honours degree programs in Physical Geography, Bachelor of Environmental Science and Bachelor of Environmental Studies. Coop is an arrangement whereby students spend alternating periods in university and employment. There are several advantages to a cooperative education program for students. One benefit is that students are able to acquire both theoretical knowledge and practical experience. This experience assists them in selecting areas of specialization for their senior courses in their chosen Focus Area or Stream. As well, Coop assists students in their professional development by enhancing networking opportunities, participation in conferences and workshops and provides the foundation of skills and strategies required in searching and acquiring employment after graduation. Students can also defray some of the costs of their university education through these work term placements. Further information about Cooperative Education and student eligibility is available from the Cooperative Education coordinator available in the Dean's office.

Students electing to participate in the Cooperative Education Option will be assessed a program fee with their formal admission into the program. Once a student has accepted a position with a Coop employer, no portion of the program fee will normally be refunded.

The Cooperative Education Option consists of two mandatory employment work terms totaling eight months and additional six credit hours of course work. An optional third work term is available to interested students. Each academic term and each employment term commence in January, May or September.



III. APPLICATION PROCESS

Required documentation:

1. Application form (online or paper) available at www.umanitoba.ca/applynow
2. Non-refundable application fee (\$80 for Canadian Citizens/ Permanent Residents, \$110 for international applicants).
3. Official final transcripts from all post-secondary institutions attended, with the exception of prior course work taken at the University of Manitoba.

Applicants who are currently registered at another institution, or in another Faculty at the University of Manitoba, cannot be considered for admission until the final grades for ALL courses are available.

If the official transcripts are not in English, official English translations are required along with the original documents. Transcripts and other academic documents become University property and will not be returned.

4. Evidence of English language proficiency if applicable. English Language Proficiency Requirement available at www.umanitoba.ca/student/admissions/international/english/
5. Proof of Permanent Resident status if applicable.
6. Proof of change of name if any academic records are under a different surname.
7. High school records if registration planned in any university courses that have specific high school subject prerequisites (e.g., biology, chemistry, physics, mathematics.).
8. Proof of membership in the Canadian military, proof of citizenship, and proof of age if applying as a Mature Status Applicant.
9. Students who have attended post-secondary institutions, particularly those who have studied outside of Canada, and are seeking to complete a degree at the University of Manitoba, must submit comprehensive course descriptions for any potentially applicable coursework.

IV. B.A. GEOGRAPHY PROGRAMS

Geography is the study of spatial variations in the environments created by nature and humans on the Earth's surface. As such, it seeks to explain how and why they differ from place to place. It is by emphasizing the spatial consideration that Geography provides its unique contribution to the Clayton H. Riddell Faculty of Environment, Earth, and Resources.

There are four broad categories of courses in the discipline. Human geography examines the spatial patterns and processes of human activity. Physical geography is concerned with physical

features and processes on and over the surface of the globe, and regional geography is a synthesis of physical and human geography. Techniques in geography focus on analytical methods used in both human and physical geography.

The Clayton H. Riddell Faculty of Environment, Earth, and Resources currently offers a Bachelor of Arts in Geography and students choose to complete the General, Advanced or Honours degree program. The General degree provides students with a basic level of understanding of the discipline and its inter-relationships. *This degree is also a useful consideration for students planning to complete the After-Degree Bachelor of Education program (refer to the Faculty of Education).* The Advanced degree provides opportunities for students who desire a broad geographical education along with a reasonable degree of specialization in a particular geographic field. Students planning a professional career or a high degree of specialization in Geography are strongly advised to enter the Honours program and should do so, if eligible, with their admission to the Faculty.

IVA. B.A. GEOGRAPHY ENTRANCE REQUIREMENTS

Students seeking admission to the B.A. Geography must have completed a minimum of 24 credit hours, which satisfy the following requirements:

- Minimum grade of "C" in each of GEOG 1280 and GEOG 1290.
- Grade Point Average of 2.00 calculated on the basis of the number of credit hours attempted as defined in Table 1.

Table 1: B.A. Geography: Calculation of Grade Point Average (GPA) for the General Degree Program

Minimum Performance Table	
Credit hours	Minimum Degree GPA
24-30	1.80
33-45	1.85
48-60	1.90
63-75	1.95
78-90	2.00
93+ hours	2.00

Students admitted to the B.A. Geography General may wish to transfer to either the Advanced or Honours degree program. Students should consult with a student advisor in the Faculty Dean's office for further information regarding this process.



V. BACHELOR OF SCIENCE IN PHYSICAL GEOGRAPHY

Physical geography includes the study of the environment through aspects of atmospheric science, geomorphology, biogeography and hydrology, all of which draw upon the natural and applied sciences to understand the natural environment. Atmospheric sciences examine the physical and biophysical processes at and near the earth's surface shaping climate and determining the weather. These processes are examined over cascading scales, from local to global. Hydrology studies the flow of water between the Earth's surface and the atmosphere, including the quantity and quality of water resources as well as the spatial variability in the hydrologic cycle. The examination of processes at the earth's surface and the associated landforms is called geomorphology. Various sub-disciplines include weathering and erosional processes, volcanoes, glacial and river systems. Biogeography studies the interrelationships between the biospheric environment and the physical environment. Formations of soils, ecosystem and biomes cycles and components, as well as human interaction with the physical environment are all topical areas of biogeography. Geomatics is an emerging subfield, referring to the techniques of spatial data acquisition, handling and analysis. Included within this sub-field have been geographic applications of computer analysis and spatial modeling, spatial statistics, remote sensing technology, and Geographic Information Systems. Many of these techniques have their origins in the applied sciences, but both physical and human geographers have contributed greatly to their development and application. The application of such methodologies in geographic fields, such as resource management, urban geography, climate change, and applied geography, has also provided closer co-operation between human and physical geography, as well as promoting considerable interdisciplinary research with other University disciplines.

The Major and Honours B.Sc. degree programs in Physical Geography serve students who desire advanced study in the academic subject matter of various themes contained within Physical Geography. The Honours program in particular is intended for students interested in the opportunity for exposure to advanced geographic research. As such, the Honours program demands higher academic performance. Students who are ineligible to enter Honours in their second year may establish this in the following year on the basis of their improved scholastic performance. The degree programs may be pursued on a full or part-time basis.

V a. B.S.C. PHYSICAL GEOGRAPHY ENTRANCE REQUIREMENTS

Entrance into the B.Sc. Physical Geography is based on completion of a minimum 24 credit hours with a cumulative grade point average of 2.00 and completion of the following courses with minimum grades:

- a grade of "C" or better in GEOG 1290 (or GEOG 1200);
- a grade of "C+" or better in 6 credit hours from PHYS 1020 or PHYS 1050, MATH 1500 (or MATH 1510 or MATH 1520), GEOL 1340, PHYS 1030 or PHYS 1070, MATH 1300 or MATH 1310.

Students interested in transferring to the Honours and/or admission to the Cooperative Education Option should contact the student advisor in the Faculty Dean's office.

VI. ENVIRONMENTAL SCIENCE AND ENVIRONMENTAL STUDIES PROGRAMS

The Clayton H. Riddell Faculty of Environment, Earth, and Resources offers interdisciplinary programs in Environmental Science and Environmental Studies. Students have the option of completing the General, Major, Major Coop, Honours or Honours Coop degree program.

Students admitted are placed in the Major degree program in either the Bachelor of Environmental Science or Bachelor of Environmental Studies until they have completed a minimum of 48 credit hours after which they can transfer to the General or Honours program or remain in the Major.

VI a. ENVIRONMENTAL SCIENCE (B. ENV. SC.) ENTRANCE & ELIGIBILITY REQUIREMENTS

Entrance into the B.Env.Sc. is based on completion of a minimum 24 credit hours with a cumulative grade point average of 2.00 and completion of 12 credit hours from the following list of courses with minimum grades:

ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, MATH 1500 (or MATH 1510 or MATH 1520), PHYS 1020 or PHYS 1050, GEOG 1290 (or GEOG 1200 or GEOL 1340), PHYS 1030 (or PHYS 1070, MATH 1200, MATH 1300, MATH 1700), with a grade of "C+" or better in six of the 12 credit hours, and a grade of "C" or better in the remaining six credit hours.

Students are referred to the Faculty Dean's office for further information about admission and/or transfer to the General, Honours and Cooperative Education Option.

VI b. ENVIRONMENTAL STUDIES (B. ENV. ST.) ENTRANCE & ELIGIBILITY REQUIREMENTS

Entrance into the B.Env.St. is based on completion of a minimum 24 credit hours with a cumulative grade point average of 2.00 and completion of 12 credit hours from the following list of courses with minimum grades:

ENVR 1000, ENVR 2000, BIOL 1010 (or BIOL 1030), STAT 1000, NATV 1220, GEOG 1200 (or GEOG 1280 and/or GEOG 1290); with a grade of "C+" or better in six of the 12 credit hours, and a grade of "C" or better in the remaining six credit hours.

Students are referred to the Faculty Dean's office for further information about admission and/or transfer to the General, Honours and Cooperative Education Options.



VII. GEOLOGICAL SCIENCES PROGRAMS

The Geological Sciences deal with the history of the Earth and its life, especially that which is recorded in rocks. Different component parts of the *Earth system, the lithosphere, biosphere, atmosphere and hydrosphere*, operate at different length and time scales. During interactions between the spheres there is feedback between the component parts as energy and mass are exchanged, transferred and redistributed. In a geological context the feedback can occur on a global scale, or on very small scales such as that which we see in minerals. More recently humans have become a major force in this Earth system because we have intervened in many of these exchanges.

Considering the Earth's past, geoscientists typically work with long time scales (in the order of millions to billions of years). We also use Hutton's original philosophy of *uniformitarianism*, stated, as *the present is the key to the past*, to solve geological problems. However, as we see changes at the Earth's surface (our environment) occurring on very short time scales we need to learn to extract the signal of human activity from the Earth's pre-human past. Once we understand and quantify the nature and extent of the Earth's natural evolution as well as our more recent environmental impact, geological sciences can help predict future changes to the Earth.

Geology and Geophysics are the sciences that provide the quantitative data on the physical and chemical behavior and characteristics of Earth materials - rocks, minerals, fluids and gases. These data are needed to model the behavior of minerals in natural as well as many industrial systems. The theoretical and instrumental expertise needed to tackle much resource extraction, mineral processing and environmental problems is resident in geological science departments. From a broad Earth, environmental and resource perspective our collective future will depend on sustainable use of our Earth's resources and care of the environment.

VII a. PROFESSIONAL CAREERS IN THE GEOSCIENCES

The professional practice of geoscience in Canada is governed by provincial/territorial law and is regulated by professional geoscience associations. In Manitoba, the Association of Professional Engineers and Geoscientists (APEGM) regulate professional practice. The requirements for professional registration are acceptable academic preparation and a subsequent period of geoscience experience. Students considering professional registration should take the B.Sc. Geological Sciences Honours or Major degree and make appropriate course selections, particularly in the basic sciences. Students should consult with the Department of Geological Sciences. Current registration information for APEGM is available in the department or from the association's web site: www.apegm.mb.ca.

VII b. MAJOR & HONOURS PROGRAMS

The **Major** programs in **Geology** and **Geophysics** are designed for students interested in combining an in-depth study of Geology and Geophysics with broad coverage of another subject or subjects of

their choice (Science or non-Science). Admission to graduate programs may be conditional upon completion of additional courses or require a period of pre-Master's study. The **Honours** programs are the most heavily concentrated programs offered and lead most directly to graduate studies. A student is required to achieve higher-grade standards than in the Major degree program. The Honours degree may be pursued on a part-time basis, although it must be recognized that students will require additional sessions to complete degree requirements.

VII c. GENERAL DEGREE PROGRAM

The General program in Geological Sciences is a three-year program and is not intended for those students who seek a career in the geosciences. *The General program is a useful consideration for students planning to complete the After-Degree Bachelor of Education program (refer to the Faculty of Education) or other programs that require an undergraduate degree for admission.*

VII d. B.S.C. IN GEOLOGICAL SCIENCES ENTRANCE REQUIREMENTS

To be admitted to the General program, a student must have completed at least 24 credit hours with a degree grade point average of 2.00 and which satisfy the following requirements:

- **Minimum grade of "C" in GEOL 1340.**

Students interested in transferring to the **Major** and/or **Honours** programs in **Geology** and **Geophysics** should contact the administrative assistant in the department office, Brenda Miller (240 Wallace Building) or a student advisor in the Faculty office for further information regarding this process.

VIII. TRANSFER CREDIT

Transfer credit will be considered for coursework completed at recognized colleges/universities within ten years of admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources. (Work taken at the University of Manitoba can be considered for credit even if beyond the ten-year limit.) All coursework assessed by the University as acceptable for transfer credit will be assigned, and can be applied to the degree up to the maximum allowed under the Faculty's residence requirement (consult the Clayton H. Riddell Faculty of Environment, Earth, and Resources section of the University's *Undergraduate Calendar* at www.umanitoba.ca/calendar for details). No transfer credit is assessed or assigned for Special Students.

In most cases, students will be asked to provide comprehensive and accurate course descriptions, including course outlines, textbook listings and copies of examinations, to assist in the transfer credit assessment process.

Only successful applicants will be notified of transfer credit assignment. Students should expect to wait six to eight weeks for completion of the transfer credit assessment after a *Certificate of Acceptance* has been received.



IX. APPLICATION & DOCUMENTATION DEADLINES

Applicants must submit the *Degree Program* Application Form : Clayton H. Riddell Faculty of Environment, Earth, and Resources (Online at www.umanitoba.ca/applynow) by the following dates:

- April 1, 2011** **Deadline** date for receipt of application for applicants applying to the Summer Term.
- April 15, 2011** **Deadline** date for receipt of complete and official transcripts requested by the Admissions Office for applicants applying to Summer Term.
- July 4 2011** **Deadline** date for receipt of application for applicants applying to the September Fall Term.
- July 18, 2011** **Deadline** date for receipt of complete and official transcripts requested by the Admissions Office for applicants applying for September.
- Nov. 1, 2011** **Deadline** date for receipt of application for applicants applying to the Winter Term.
- Nov. 15, 2011** **Deadline** date for receipt of complete and official transcripts requested by the Admissions Office for applicants applying for January.

X. APPEALS

Appeals of academic assessment of students must be submitted to the Dean's Office, Clayton H. Riddell Faculty of Environment, Earth, and Resources, within 21 days of the date of notification of the action sent to the student. If the applicant wishes to then subsequently appeal this decision made by the Dean's Office, he/she should direct his/her request, within 10 days of the receipt of this decision, to the University Secretary, 312 Administration Building, phone (204) 474-9593, for transmission to the Senate Appeals Committee.

XI. APPLICATION CONTACT INFORMATION

All application inquiries and required documents should be directed to the Admissions Office.

Admissions

Mark Curran
424 University Centre
University of Manitoba
Winnipeg, Manitoba R3T 2N2

(204) 474-8810
FAX: (204) 474-7554
Email: curran@cc.umanitoba.ca

XII. ACADEMIC ADVISORS

Students are directed to the following for additional program information:

Student Affairs Coordinator

Jason Jorgenson
440 Wallace Bldg.
(204) 474-7165
Email: Jason_Jorgenson@umanitoba.ca

Student Advisor

Ilka Cudmore
440 Wallace Bldg
(204) 474-9847
Email: Ilka_Cudmore@umanitoba.ca

Department of Geological Sciences

Brenda Miller
240 Wallace Bldg.
(204) 474-9677
Email: Brenda_Miller@umanitoba.ca

XIII. OTHER USEFUL CONTACT INFORMATION

The mailing addresses for the following University offices are:
(Name of Office)
(Room number and Building)
University of Manitoba
Winnipeg, Manitoba R3T 2N2

Clayton H. Riddell Faculty of Environment, Earth, and Resource Dean's Office

440 Wallace Bldg.
Telephone: (204) 474-7252
FAX: (204) 275-3147

Dean

440 Wallace Bldg.
Telephone: (204) 474-7162
FAX: (204) 275-3147

Student Union Office

University Centre
Telephone: (204) 474-8678

Student Services

440 Wallace Bldg.
Telephone: (204) 474-7252
FAX: (204) 275-3147

Financial Aid & Awards

422 University Centre
Telephone: (204) 474-9531
FAX: (204) 474-7554

Housing & Student Life

101 Arthur V. Mauro Residences
Telephone: (204) 474-6404
FAX: (204) 474-7662